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MS 814 (2007) (English): PALM OIL - SPECIFICATION (SECOND REVISION)

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MALAYSIAN STANDARD

MS 814:2007

PALM OIL - SPECIFICATION (SECOND REVISION)

ICS: 67.200.10

Descriptors: palm oil, specification

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Committee representation

The Food and Food Products Industry Standards Committee (ISC U) under whose authority this Malaysian Standard was developed, comprises representatives from the following organisations:

Department of Agriculture

Department of Chemistry Malaysia

Department of Standards Malaysia

Federal Agricultural Marketing Authority

Federation of Malaysian Manufacturers

Malaysian Agricultural Research and Development Institute

Malaysian Association of Standards Users

Malaysian Institute of Food Technology

Malaysian Palm Oil Association

Malaysian Palm Oil Board

Ministry of Agriculture and Agro-Based Industry

Ministry of Health Malaysia

Ministry of International Trade and Industry

Ministry of Science, Technology and Innovation (National Biotechnology Division)

Universiti Kebangsaan Malaysia

Universiti Putra Malaysia

The Technical Committee on Fats and Oils which developed this Malaysian Standard was managed by the Malaysian Palm Oil Board in its capacity as an authorised Standards-Writing Organisation and consists of representatives from the following organisations:

Kumpulan Guthrie Berhad

Malayan Edible Oil Manufacturers' Association

Malaysian Oleochemical Manufacturers' Group

Malaysian Palm Oil Association

Malaysian Palm Oil Board (Secretariat)

Ministry of Health Malaysia

Palm Oil Refiners Association of Malaysia

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FOREWORD

This Malaysian Standard was developed by the Technical Committee on Fats and Oils under the authority of the Food and Food Products Industry Standards Committee. Development of this standard was carried out by the Malaysian Palm Oil Board (MPOB) which is the Standards-Writing Organisation (SWO) appointed by SIRIM Berhad to develop standards for palm oil products, oil-based food products, oleochemicals, palm kernel products and oil palm-based products.

This Malaysian Standard is the second revision of MS 814, *Specification for palm oil* which was published in 1983 and amended in 1984 and 1994.

The major modifications in this revision are as follows:

a) Table 1 which specifies "the identity characteristics for palm oil" has been changed to "guideline identity characteristics for palm oil". In addition, the mean and standard deviation of the identity characteristics are included.

b) Table 2, which specifies the quality requirements for palm oil product, has been streamlined with the crude palm oil being categorised into two instead of three categories.

This Malaysian Standard cancels and replaces MS 814:1994, *Specification for palm oil.*

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PALM OIL - SPECIFICATION (SECOND REVISION)

1. Scope

This Malaysian Standard prescribes requirements for crude and processed palm oil.

2. Normative references

The following normative references are indispensable for the application of this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the normative references (including any amendments) applies.

MS 1231, *Method of sampling for palm oil and palm oil products*

MS 817, *Method of test for palm oil and palm oil products* related series

Malaysian Food Regulations 1985

3. Definitions

For the purposes of this standard, the following definitions apply:

3.1 Crude palm oil (CPO)

Crude palm oil is the oil derived by mechanical expression from the fleshy pulp (mesocarp) of the fruit of *Elaeis guineensis* Jacq.

3.2 Neutralised palm oil (NPO)

Neutralised palm oil is obtained by neutralisation of crude palm oil with alkali.

3.3 Neutralised, bleached palm oil (NBPO)

Neutralised, bleached palm oil is obtained from crude palm oil by neutralisation with alkali and treatment with bleaching earth or activated carbon or both; or from neutralised palm oil by treatment with bleaching earth or activated carbon or both.

3.4 Neutralised, bleached and deodorised palm oil (NBD palm oil)

Neutralised, bleached and deodorised palm oil is obtained from crude or semi-refined palm oil which has been refined by neutralisation with alkali, bleached with bleaching earth or activated carbon or both and deodorised by steam.

3.5 Refined, bleached and deodorised palm oil (RBD Palm oil)

Refined, bleached and deodorised palm oil is obtained from crude or semi-refined palm oil which has been bleached, deodorised and deacidified by physical means.

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4. Identity characteristics

The identity characteristics for palm oil are given in Table 1. The ranges of these identity characteristics are not mandatory and are considered as guideline levels.

Table 1. Guideline identity characteristics for palm oil

Identity characteristics	Observed range	Mean	Standard deviation
Apparent density, kg/l, at 50 °C	0.888 9– 0.889 6	0.889 2	0.000 2
Refractive index, n_D 50 °C	1.452 1 – 1.454 1	1.453 3	0.000 3
Saponification value, mg KOH/g oil	194 – 205	199	2.4
Unsaponifiable matter, %	0.19 – 0.44	0.32	0.066
Fatty acid composition, (wt % as methyl esters)			
C12 : 0	0.0 – 0.5	0.2	0.10
C14 : 0	0.9 – 1.5	1.1	0.08
C16 : 0	39.2 – 45.8	43.5	0.95
C16 : 1	0.0 – 0.4	0.2	0.05
C18 : 0	3.7 – 5.1	4.3	0.18
C18 : 1	37.4 – 44.1	39.8	0.94
C18 : 2	8.7– 12.5	10.3	0.56
C18 : 3	0.0 – 0.6	0.3	0.07
C20 : 0	0.0 – 0.5	0.2	0.16
Iodine value (Wijs)	50.4 – 53.7	52.0	0.66
Slip melting point, °C	33.8 – 39.2	36.7	0.84
Total carotenoids (as β-carotene), mg/kg	474 – 689	581	45.5

NOTE. The identity characteristics of processed palm oil differ in no significant ways from those of crude palm oil with the exception of caretenoids.

5. Quality characteristics

5.1 General characteristics

5.1.1 Colour at 50 ° C to 55° C

The colour of crude or neutralised palm oil shall be bright, clear and orange-red. The colour of neutralised, bleached palm oil shall be bright, clear and reddish yellow while that for neutralised/refined, bleached and deodorised palm oil shall be bright, clear and light yellow.

5.1.2 Odour

All palm oil products shall be free from foreign and rancid odour.

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5.2 Quality requirements

5.2.1 The standard shall incorporate the following palm oil products:-

5.2.1.1 Crude palm oil (CPO), special quality (SQ) and standard quality (STD).

5.2.1.2 Neutralised palm oil (NPO);

5.2.1.3 Neutralised, bleached palm oil (NBPO); and

5.2.1.4 Neutralised, bleached and deodorised palm oil/refined, bleached and deodorised palm oil (NBD/RBD)

5.2.2 The products, at the time of shipment as per current trade practice, *i.e.* at the point and time of delivery of the oil from sellers' tanks, whether ex-refinery, ex-bulking installation, or otherwise, as the case may be, shall conform to the requirements prescribed in Table 2.

Table 2. Quality requirements for palm oil products

Characteristics	Product requirements				
	Crude (CPO)		Neutralised (NPO)	Neutralised, bleached (NBPO)	Neutralised/ refined, bleached and deodorised (NBD/RBD)
	Special quality (SQ) grade	Standard quality (STD grade)			
Free fatty acid (as palmitic), % max	2.5	5.0	0.25	0.25	0.10
Moisture and impurities, % max	0.25	0.25	0.1	0.10	0.10
Peroxide value, meq/kg max	1.0	2.0	-	-	2.0
Anisidine value, max	4.0	5.0	-	-	4.0
Colour, 133.35 mm (5 ¼ in) Lovibond, max	-	-	-	20.0 R	3.0 R
DOBI, min	2.8	2.3	-	-	-

6. Hygiene

The product shall be processed and packaged under hygienic conditions in licensed premises as imposed by the competent authorities from time to time in accordance with the local government by laws, public health legislation and codes of practice as well as guidelines in force in Malaysia where relevant.

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7. Packaging and labelling

7.1 Packaging

The product shall be supplied in bulk or in rust-free steel drums, or as agreed upon between the purchaser and the supplier.

7.2. Labelling

7.2.1 The product shall comply with current Malaysian Food Regulations 1985 on labelling.

7.2.2 The package shall be marked legibly and indelibly with the following information:

a) name of the product;

b) weight of the product;

c) producer's name and address or trade-mark;

d) month and year of manufacture and lot identification or code; and

e) country of origin.

8. Certification

8.1 Each product may, by arrangement with a recognised certification body, be marked with the certification mark of that body, provided the product conforms to the requirements of this Malaysian Standard.

8.2 The product may be certified *Halal* by a recognised authority.

9. Sampling and testing

Representative samples of the product shall be drawn according to the method prescribed in MS 1231 and the sample shall be prepared according to MS 817: Part 1. Tests shall be carried out according to the methods prescribed in the related series of MS 817.

10. Compliance

10.1 Upon testing, when each of the samples is found to conform to the requirements specified in this standard, the lot, batch or consignment from which the samples have been drawn shall be deemed to comply with this Malaysian Standard.

10.2 In this context, the term 'sample' shall be taken to include also 'composite sample or samples' where appropriate as agreed upon mutually between seller and buyer.

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11. Legal requirements

The product, in all other aspects, shall comply with the requirements of the legislation currently in force in Malaysia.

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